Sherritt Gordon Mines Limited
Research and Development Division

Fertilizer Results in Saskatchewan, 1970

Responses to nitrogen and phosphorus by Conquest barley, Echo rapeseed, Noralta flax and Tokyo buckwheat were determined at Naisberry, and Burgis Saskatchewan in 1970.

Yields obtained and the economics of the different fertilizer applications are given in table and graphic form on the following pages.

Conquest Barley

Barley responded up to 180 pounds of nitrogen (N) at Naisberry and 120 pounds of N at Burgis. The most profitable application at Naisberry was the 90 pounds of N and 15 pounds of phosphorus (P_2O_5) rate for a profit of $15.93 from the use of fertilizer. At Burgis the 90 pound N and 15 pound P_2O_5 rate gave a profit of $4.48 from the use of fertilizer. Fertilizer trials conducted over the years have indicated that where levels of available nitrogen in the soil are low, the application of 90 pounds of nitrogen with 15 to 30 pounds of phosphorus (P_2O_5) on barley has been the most profitable.

Echo Rapeseed

Yields of rapeseed were still increasing at the 240 pound nitrogen rate at Naisberry while at Burgis the highest yield was obtained at the 180 pound nitrogen rate. The most profitable return at Naisberry was $41.38 with the 90 pound nitrogen and 15 pound phosphorus (P_2O_5) rate, while at Burgis the 90 pound N and 15 pound P_2O_5 rate gave increased returns of $20.38. Rapeseed responds well to nitrogen applications and on soils low in available nitrogen the 90 pound nitrogen and 15 to 20 pound phosphorus (P_2O_5) rate will generally give the highest profitable returns.

Noralta Flax

Flax did not respond well to broadcast nitrogen applications in 1970 at both sites. A profitable yield increase was obtained when the nitrogen and phosphorus were banded. At Naisberry the 40 pound N and P_2O_5 rate gave increased returns of $8.01 while at Burgis the 30 pound N and P_2O_5 rate was the highest with an increased return of $0.61. Fertilizer results in Manitoba and Alberta indicate that generally up to 90 pounds of nitrogen can be profitably added to flax grown on soils low in available nitrogen. Response to phosphorus has been variable and generally 15 pounds of phosphorus (P_2O_5) have been adequate.

Tokyo Buckwheat

The most profitable rate of fertilizer application on buckwheat at Naisberry was 90 pounds of nitrogen and 15 pounds of phosphorus (P_2O_5)

for an increased return of $30.09. At Burgis the highest return was obtained with 30 pounds of nitrogen and 60 pounds of phosphorus for a profit due to fertilizer of $2.85. Trials to date have indicated that rates of 60 to 90 pounds of nitrogen with 15 to 30 pounds of phosphorus (P_2O_5) can profitably be added to most soils low in available nitrogen.

Effect of Nitrogen Applications on Soil Nitrogen Levels in 1970

The effect of nitrogen applications on soil nitrate-nitrogen levels after the production of a crop of barley or rapeseed is given in a following graph. There is a reduction in soil nitrate-nitrogen levels when a crop is produced and no nitrogen fertilizer applied. At Naisberry (Goodman) where yield increases were substantial there is basically no increase in soil nitrate-nitrogen levels from that present in spring. The soil nitrate-nitrogen level at the Burgis (Heshka) site returned to its spring level at the 120 pound nitrogen rate. The 180 pound nitrogen rate increased the level of nitrate-nitrogen in the soil to a level similar to that occurring under summerfallow conditions. The difference in soil nitrate-nitrogen levels at the two sites at the high rates of nitrogen applications is related to yields obtained. Higher yields were obtained at these high rates at the Goodman (Naisberry) site as compared to the Heshka (Burgis) site for all crops. The greater use of applied nitrogen by rapesee is also indicated by the higher levels of soil nitrate-nitrogen occurring after the crop of barley.

Effect of Nitrogen Applications on Protein

The effect of fertilizer applications on percent protein in the grain of Conquest barley in 1968 and 1969 is given in a following table. In all instances, high rates of nitrogen have increased the percent protein in the grain. The effect of nitrogen applications on the level of protein in the grain is not too apparent until the maximum yield potential of the crop has been obtained. Grain grown on soils with a very high level of available nitrogen in the spring will tend to have a high protein level. This is significant if one is growing barley for malting purposes where a protein level below 13.5 percent is desired. High protein grain is desired by the feed industry. Generally soils low in available nitrogen may be fertilized with 60 to 90 pounds of nitrogen before the level of protein is greatly affected.

Fort Saskatchewan, Alberta

1970 Fertilizer Plot Data

Seed: Conquest Barley Response to Nitrogen, Phosphorus and Sulphur Fertilizers

Location: Bill Goodman, Naisberry, Saskatchewan, NE 36-44-18-W2

Soil Zone: Black Soil Type Melfort Silty Clay Loam Topography Flat

Drainage Fair

Soil Analysis: Pounds per Acre N: 38 P: 28 K: 451

Cropping History: 1969 and 1968 Wheat, 1967 Summerfallow

Date of Seeding: 5 June Rate of Seeding: 1 1/2 bus per acre Date of Harvesting: 28 August

Moisture: Fair at time of seeding Total Rainfall:

Herbicide: 1 qt per acre - Avadex before seeding

YIELD RESULTS

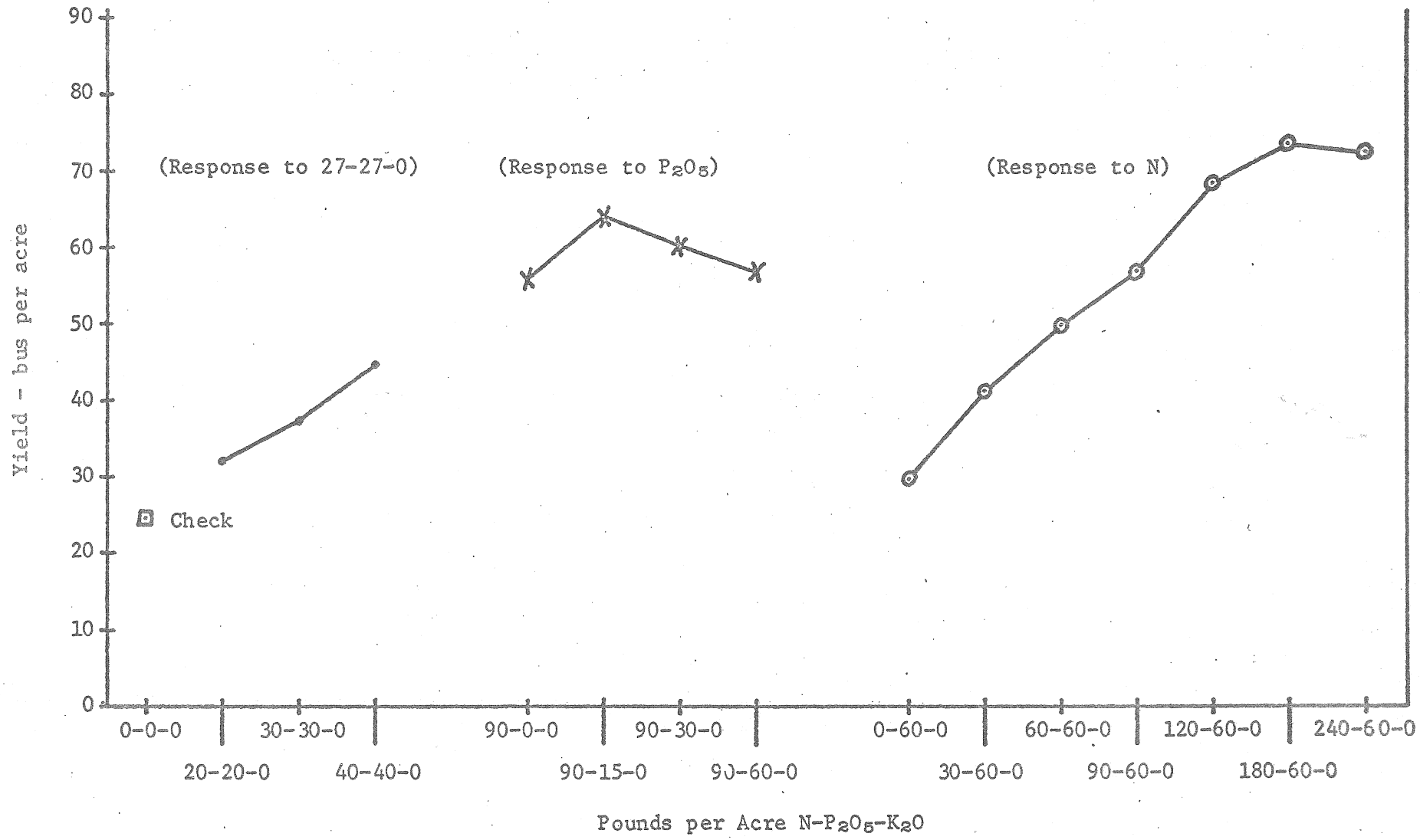
Pounds per Acre				Product (1)	Cost of (2) Fertilizer	Yield bus/A	Crop Value-Fert. Cost		Profit Due to Fert.	
N	P_2O_5	K_2O	S				$0.65/bus	$1.00/bus	$0.65/bus	$1.00/bu
0	0	0	0	Check	0.00	24.8	16.12	24.80	0.00	0.00
90	0	0	103	21-0-0 at 429	8.37	55.8	27.90	47.43	11.78	22.63
90	15	0	99	21-0-0 at 414 + 11-55-0 at 27	9.62	64.1	32.05	54.48	15.93	29.68
90	30	0	96	21-0-0 at 400 + 11-55-0 at 54	10.91	60.2	28.22	49.29	12.10	24.49
90	60	0	89	21-0-0 at 371 + 11-55-0 at 109	13.50	56.9	23.49	43.40	7.37	18.60
0	60	0	0	11-55-0 at 109	6.27	29.8	13.10	23.53	- 3.02	- 1.27
30	60	0	21	21-0-0 at 86 + 11-55-0 at 109	7.95	41.1	18.77	33.15	2.65	8.35
60	60	0	55	21-0-0 at 229 + 11-55-0 at 109	10.74	49.8	21.63	39.06	5.51	14.26
120	60	0	123	21-0-0 at 514 + 11-55-0 at 109	16.29	68.3	28.11	52.01	11.99	27.21
180	60	0	192	21-0-0 at 800 + 11-55-0 at 109	21.87	73.5	25.91	51.63	9.79	26.83
240	60	0	261	21-0-0 at 1086 + 11-55-0 at 109	27.45	72.5	19.68	45.05	3.56	20.25
20	20	0	0	27-27-0 at 74	4.00	32.1	16.87	28.10	0.75	3.30
30	30	0	0	27-27-0 at 111	5.99	37.3	18.26	31.31	2.14	6.51
40	40	0	0	27-27-0 at 148	7.99	44.9	21.20	36.91	5.08	12.11

(1) 21-0-0 Broadcast, 11-55-0 Drilled in with the seed, 27-27-0 Banded

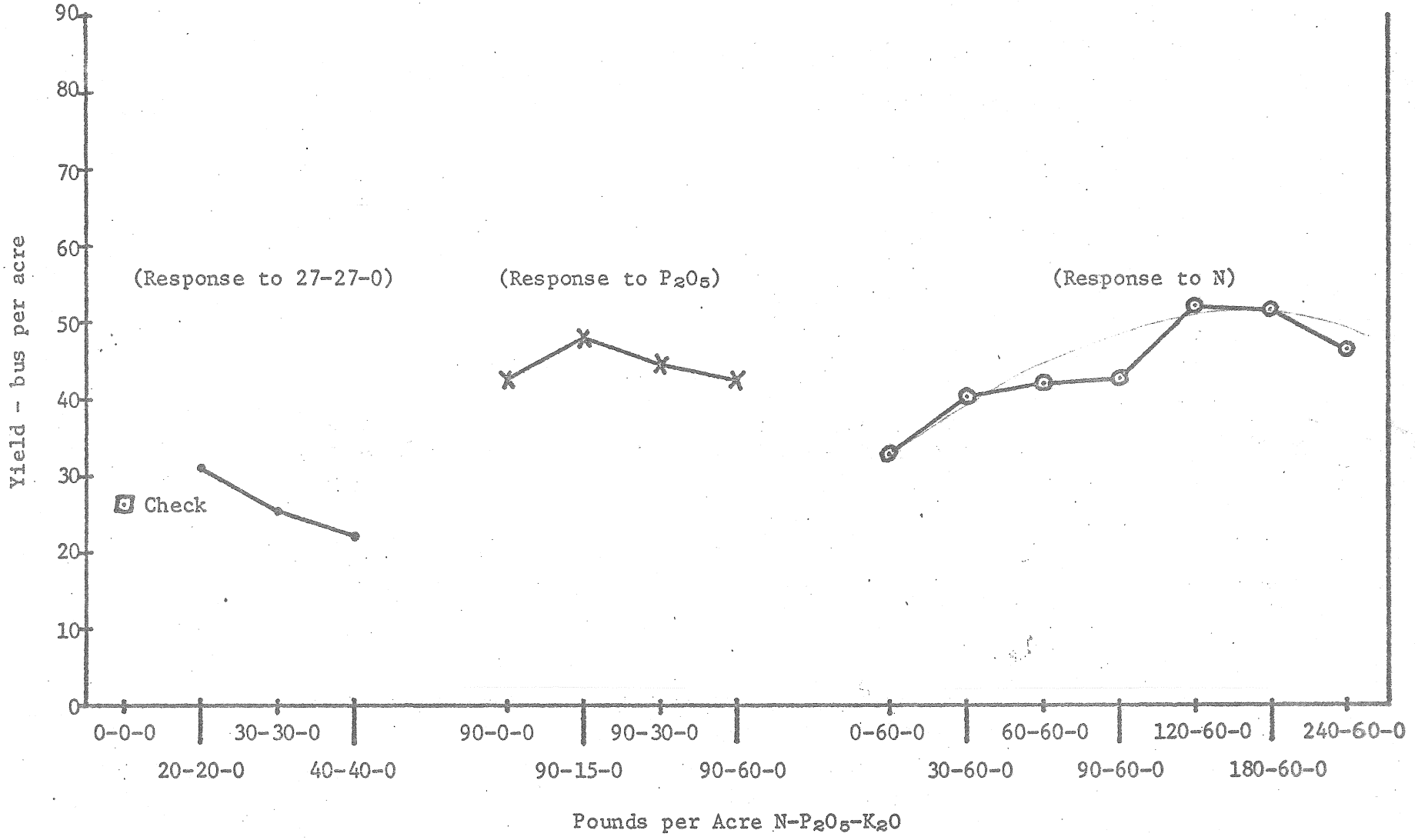
(2) Fertilizer Costs 11-55-0 at $115/ton, 21-0-0 at $39.00/ton, 27-27-0 at $108.00/ton

SEE YOUR SHERRITT AGENT FOR ADDITIONAL RESULTS

Conquest Barley Response to Applications of Nitrogen (N), Phosphorus (P_2O_5) and Nitrogen-Phosphorus Fertilizers at Naisberry, Saskatchewan in 1970



Conquest Barley Response to Applications of Nitrogen (N), Phosphorus (P_2O_5) and Nitrogen-Phosphorus Fertilizers at Burgis, Saskatchewan in 1970



Sherritt Gordon Mines Limited
Research and Development Division

Fort Saskatchewan, Alberta

1970 Fertilizer Plot Data

Seed: Echo Rapeseed, Response to Nitrogen, Phosphorus and Sulphur Fertilizers

Location: Bill Goodman, Naisberry, Saskatchewan, NE 36-44-18-W2

Soil Zone: Black Soil Type Melfort Silty Clay Loam Topography Flat

Drainage Fair

Soil Analysis: Pounds per Acre N: 38 P: 28 K: 451

Cropping History: 1969 and 1968 Wheat, 1967 Summerfallow

Date of Seeding: 5 June Rate of Seeding: 5 lb per acre Date of Harvesting: 22 August

Moisture: Fair at time of seeding Total Rainfall:

Herbicide: 1 qt per acre - Avadex before seeding

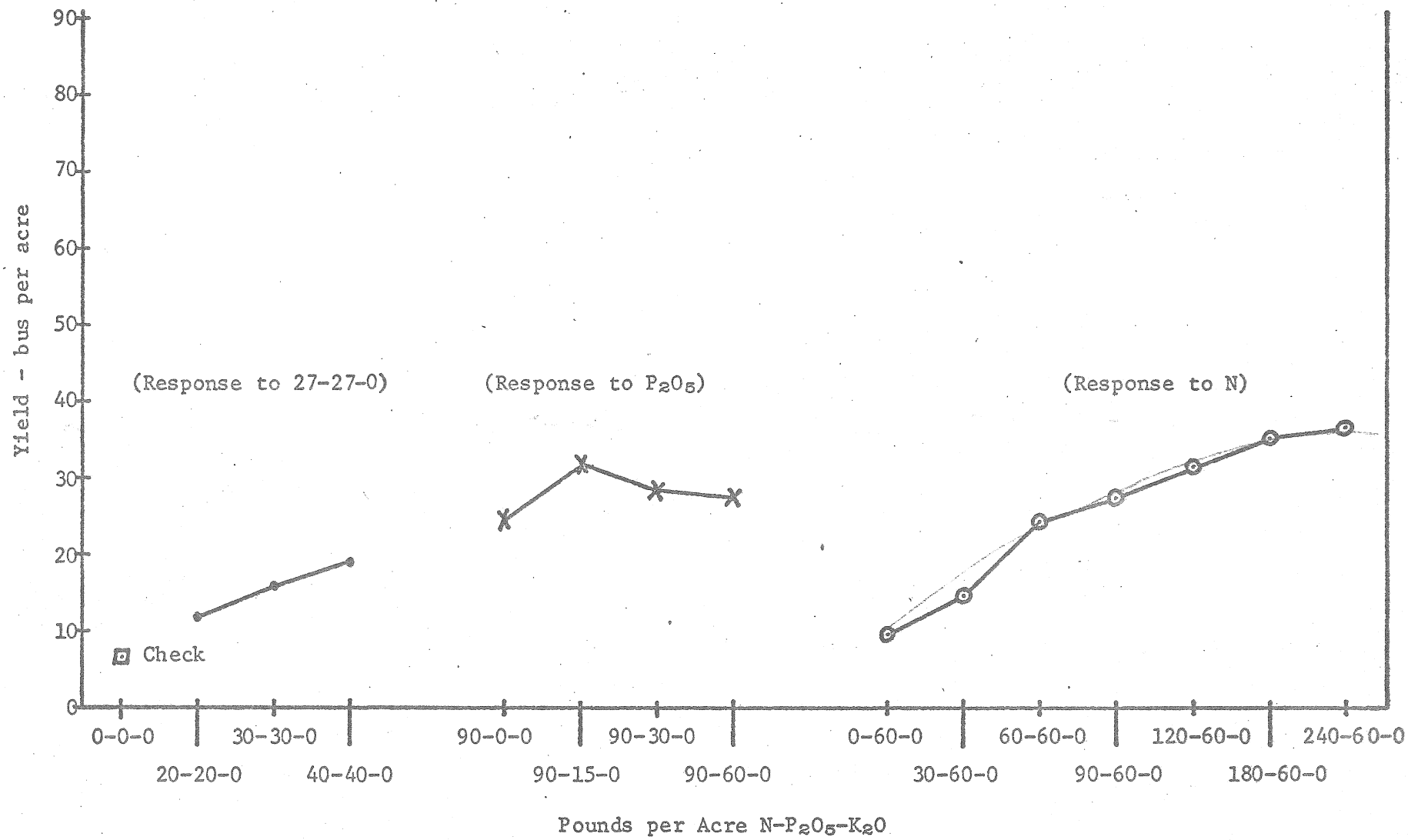
YIELD RESULTS

Pounds per Acre				Product (1)	Cost of (2) Fertilizer	Yield	Crop Value-Fert. Cost		Profit Due to Fert	
N	P_2O_5	K_2O	S			bus/A	$2.00/bus	$2.50/bus	$2.00/bus	$2.50/bu
0	0	0	0	Check	0.00	6.4	12.80	16.00	0.00	0.00
90	0	0	103	21-0-0 at 429	8.37	24.5	40.63	52.88	27.83	36.88
90	15	0	99	21-0-0 at 414 + 11-55-0 at 27	9.62	31.9	54.18	70.13	41.38	54.13
90	30	0	96	21-0-0 at 400 + 11-55-0 at 54	10.91	28.4	45.89	60.09	33.09	44.09
90	60	0	89	21-0-0 at 371 + 11-55-0 at 109	13.50	27.5	41.50	55.25	28.70	39.25
0	60	0	0	11-55-0 at 109	6.27	9.7	13.13	17.98	0.33	1.98
30	60	0	21	21-0-0 at 86 + 11-55-0 at 109	7.95	14.7	21.45	28.80	8.65	12.80
60	60	0	55	21-0-0 at 229 + 11-55-0 at 109	10.74	24.3	37.86	50.01	25.06	34.01
120	60	0	123	21-0-0 at 514 + 11-55-0 at 109	16.29	31.4	46.51	62.21	33.71	46.21
180	60	0	192	21-0-0 at 800 + 11-55-0 at 109	21.87	35.2	48.53	66.13	35.73	50.13
240	60	0	261	21-0-0 at 1086 + 11-55-0 at 109	27.45	36.7	45.95	64.30	33.15	48.30
20	20	0	0	27-27-0 at 74	4.00	11.9	19.80	25.75	7.00	9.75
30	30	0	0	27-27-0 at 111	5.99	15.9	25.81	33.76	13.01	17.76
40	40	0	0	27-27-0 at 148	7.99	19.1	30.21	39.76	17.41	23.76

(1) 21-0-0 Broadcast, 11-55-0 Drilled in with the seed, 27-27-0 Banded
(2) Fertilizer Costs 11-55-0 at $115/ton, 21-0-0 at $39.00/ton, 27-27-0 at $108.00/ton

SEE YOUR SHERRITT AGENT FOR ADDITIONAL RESULTS

Echo Rapeseed Response to Applications of Nitrogen (N), Phosphorus (P_2O_5) and Nitrogen-Phosphorus Fertilizers at Naisberry, Saskatchewan in 1970



Research and Development Division

Fort Saskatchewan, Alberta

1970 Fertilizer Plot Data

Seed: Echo Rapeseed, Response to Nitrogen, Phosphorus and Sulphur Fertilizers

Location: Bill Heshka, Burgis, Saskatchewan. NW 18-29-3-W2

Soil Zone: Black Soil Type Canora Loam Topography Flat

Drainage Good

Soil Analysis: Pounds per Acre N: 32 P: 18 K: 268

Cropping History: 1969 Barley

Date of Seeding: 4 June Rate of Seeding: 5 lb per acre Date of Harvesting: 21 August

Moisture: Good at time of seeding Total Rainfall: 7.03 inches

Herbicide: 1 1/2 qt per acre - Avadex before seeding. 5 oz. per acre Carbyne on 16 June

YIELD RESULTS

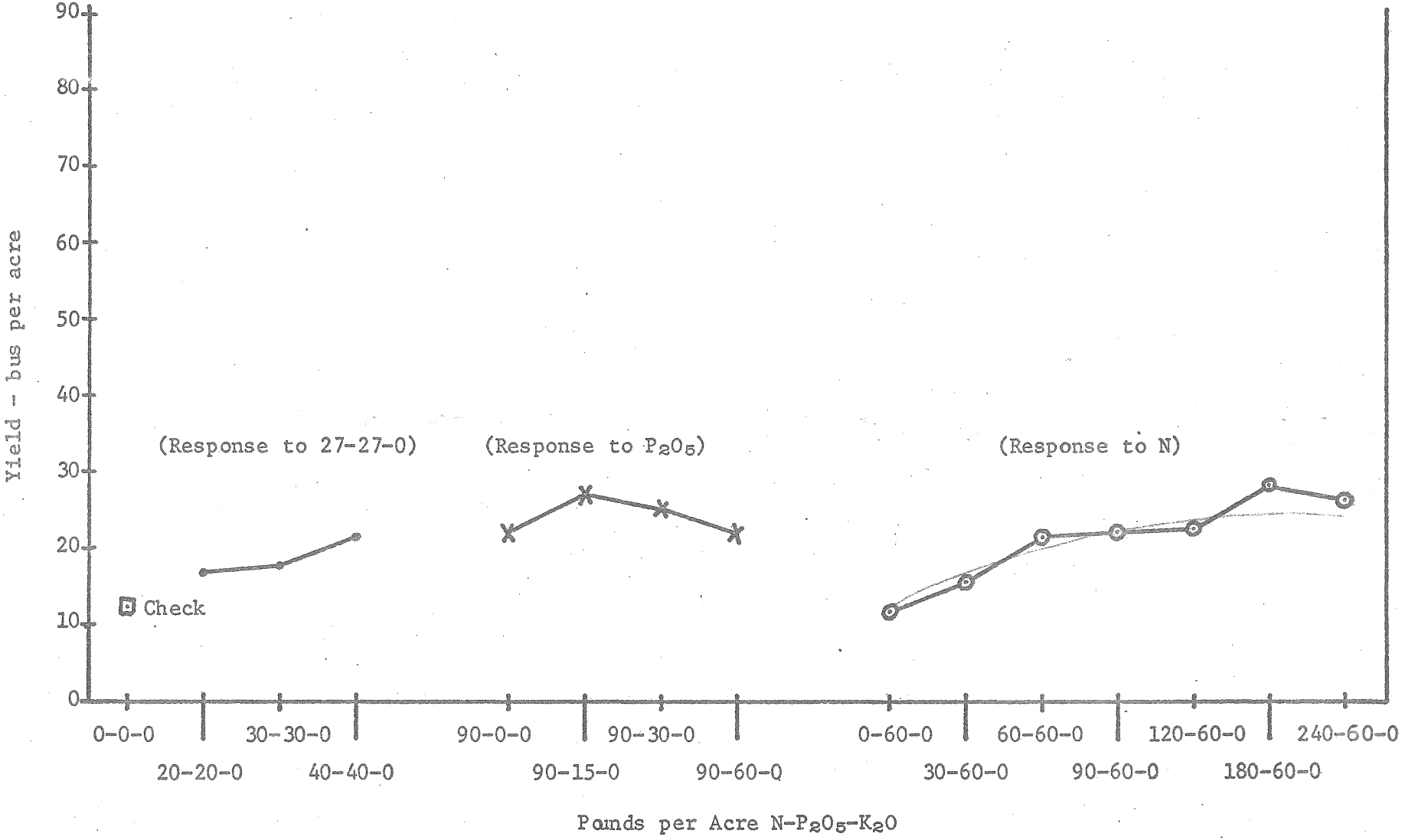
Pounds per Acre				Product (1)	Cost of (2) Fertilizer	Yield	Crop Value-Fert. Cost		Profit Due to Fert.	
N	P_2O_5	K_2O	S			bus/A	$2.00/bus	$2.50/bus	$2.00/bus	$2.50/bu
0	0	0	0	Check	0.00	12.2	24.40	30.50	0.00	0.00
90	0	0	103	21-0-0 at 429	8.37	22.1	35.83	46.88	11.43	16.38
90	15	0	99	21-0-0 at 414 + 11-55-0 at 27	9.62	27.2	44.78	58.38	20.38	27.88
90	30	0	96	21-0-0 at 400 + 11-55-0 at 54	10.91	25.2	39.49	52.09	15.09	21.59
90	60	0	89	21-0-0 at 371 + 11-55-0 at 109	13.50	22.1	30.70	41.75	6.30	11.25
0	60	0	0	11-55-0 at 109	6.27	11.9	10.30	23.48	-14.10	- 7.02
30	60	0	21	21-0-0 at 86 + 11-55-0 at 109	7.95	15.5	23.05	30.80	- 1.35	0.30
60	60	0	55	21-0-0 at 229 + 11-55-0 at 109	10.74	21.6	32.46	43.26	8.06	12.76
120	60	0	123	21-0-0 at 514 + 11-55-0 at 109	16.29	22.7	29.11	40.46	4.71	9.96
180	60	0	192	21-0-0 at 800 + 11-55-0 at 109	21.87	28.4	34.93	49.13	10.53	18.63
240	60	0	261	21-0-0 at 1086 + 11-55-0 at 109	27.45	26.3	25.15	38.30	0.75	7.80
20	20	0	0	27-27-0 at 74	4.00	16.9	29.80	38.25	5.40	7.75
30	30	0	0	27-27-0 at 111	5.99	17.9	29.81	38.76	5.41	8.26
40	40	0	0	27-27-0 at 148	7.99	21.6	35.21	46.01	10.81	15.51

(1) 21-0-0 Broadcast, 11-55-0 Drilled in with the seed, 27-27-0 Banded

(2) Fertilizer Costs 11-55-0 at $115/ton, 21-0-0 at $39.00/ton, 27-27-0 at $108.00/ton

SEE YOUR SHERRITT AGENT FOR ADDITIONAL RESULTS

Echo Rapeseed Response to Applications of Nitrogen (N), Phosphorus (P_2O_5) and Nitrogen-Phosphorus Fertilizers at Burgis, Saskatchewan in 1970



Sherritt Gordon Mines Limited
Research and Development Division

Fort Saskatchewan, Alberta

1970 Fertilizer Plot Data

Seed: Noralta Flax Response to Nitrogen, Phosphorus and Sulphur Fertilizers

Location: Bill Goodman, Naisberry, Saskatchewan, NE 36-44-18-W2

Soil Zone: Black Soil Type Melfort Silty Clay Loam Topography Flat

Drainage Fair

Soil Analysis: Pounds per Acre N: 38 P: 28 K: 451

Cropping History: 1969 and 1968 Wheat, 1967 Summerfallow

Date of Seeding: 5 June Rate of Seeding: 40 lb per acre Date of Harvesting: 19 September

Moisture: Fair at time of seeding Total Rainfall: No record kept

Herbicide: 1 q per acre Avadex before seeding

YIELD RESULTS

Pounds per Acre				Product (1)	Cost of (2) Fertilizer	Yield	Crop Value-Fert. Cost		Profit Due to Fert	
N	P_2O_5	K_2O	S			bus/A	$2.00/bus	$3.00/bus	$2.00/bus	$3.00/bu
0	0	0	0	Check	0.00	11.1	22.20	33.30	0.00	0.00
90	0	0	103	21-0-0 at 429	8.37	15.2	22.03	37.23	- 0.17	3.93
90	15	0	99	21-0-0 at 414 + 11-55-0 at 27	9.62	13.4	17.18	30.58	- 5.02	- 2.72
90	30	0	96	21-0-0 at 400 + 11-55-0 at 54	10.91	13.8	16.69	30.49	- 5.51	- 2.81
90	60	0	89	21-0-0 at 371 + 11-55-0 at 109	13.50	12.5	11.50	24.00	-10.70	- 9.30
0	60	0	0	11-55-0 at 109	6.27	12.2	18.13	30.33	- 4.07	- 2.97
30	60	0	21	21-0-0 at 86 + 11-55-0 at 109	7.95	12.8	17.65	30.45	- 4.55	- 2.85
60	60	0	55	21-0-0 at 229 + 11-55-0 at 109	10.74	15.9	21.06	39.96	- 1.14	6.66
120	60	0	123	21-0-0 at 514 + 11-55-0 at 109	16.29	14.3	12.31	26.61	- 9.89	- 6.69
180	60	0	192	21-0-0 at 800 + 11-55-0 at 109	21.87	11.7	1.53	13.23	-20.67	-20.07
240	60	0	261	21-0-0 at 1086 + 11-55-0 at 109	27.45	10.8	- 5.85	4.95	-28.05	-28.35
20	20	0	0	27-27-0 at 74	4.00	14.4	24.80	39.20	2.60	5.90
30	30	0	0	27-27-0 at 111	5.99	15.1	24.21	39.31	2.01	6.01
40	40	0	0	27-27-0 at 148	7.99	19.1	30.21	49.31	8.01	16.01

(1) 21-0-0 Broadcast, 11-55-0 Drilled in with the seed, 27-27-0 Banded
(2) Fertilizer Costs 11-55-0 at $115/ton, 21-0-0 at $39.00/ton, 27-27-0 at $108.00/ton

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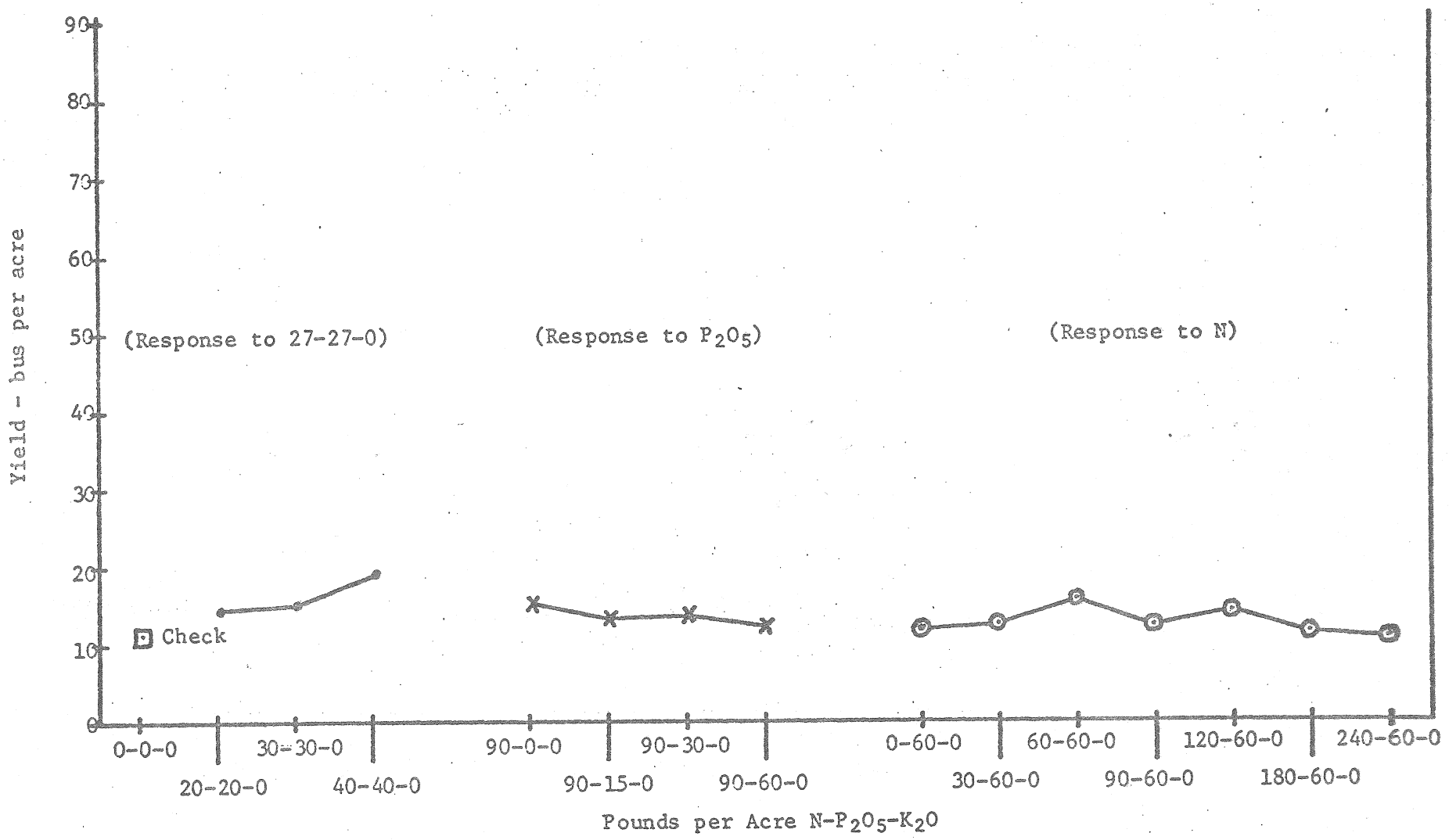
Noralta Flax Response to Applications of Nitrogen (N), Phosphorus (P_2O_5) and Nitrogen-Phosphorus Fertilizers at Naisberry, Saskatchewan in 1970



Sherritt Gordon Mines Limited
Research and Development Division

Fort Saskatchewan, Alberta

1970 Fertilizer Plot Data

Seed: Noralta Flax Response to Nitrogen, Phosphorus and Sulphur Fertilizers

Location: Bill Heshka, Burgis, Saskatchewan NW 18-29-3-W2

Soil Zone: Black Soil Type Canora Loam Topography Flat

Drainage Good

Soil Analysis: Pounds per Acre N: 32 P: 18 K: 268

Cropping History: 1969 Barley

Date of Seeding: 4 June Rate of Seeding: 40 lb per acre Date of Harvesting: 18 September

Moisture: Good at time of seeding Total Rainfall: 7.03 inches

Herbicide: 1 1/2 qt per acre Avadex before seeding, 1 pt per acre Buctril "M" on 5 July

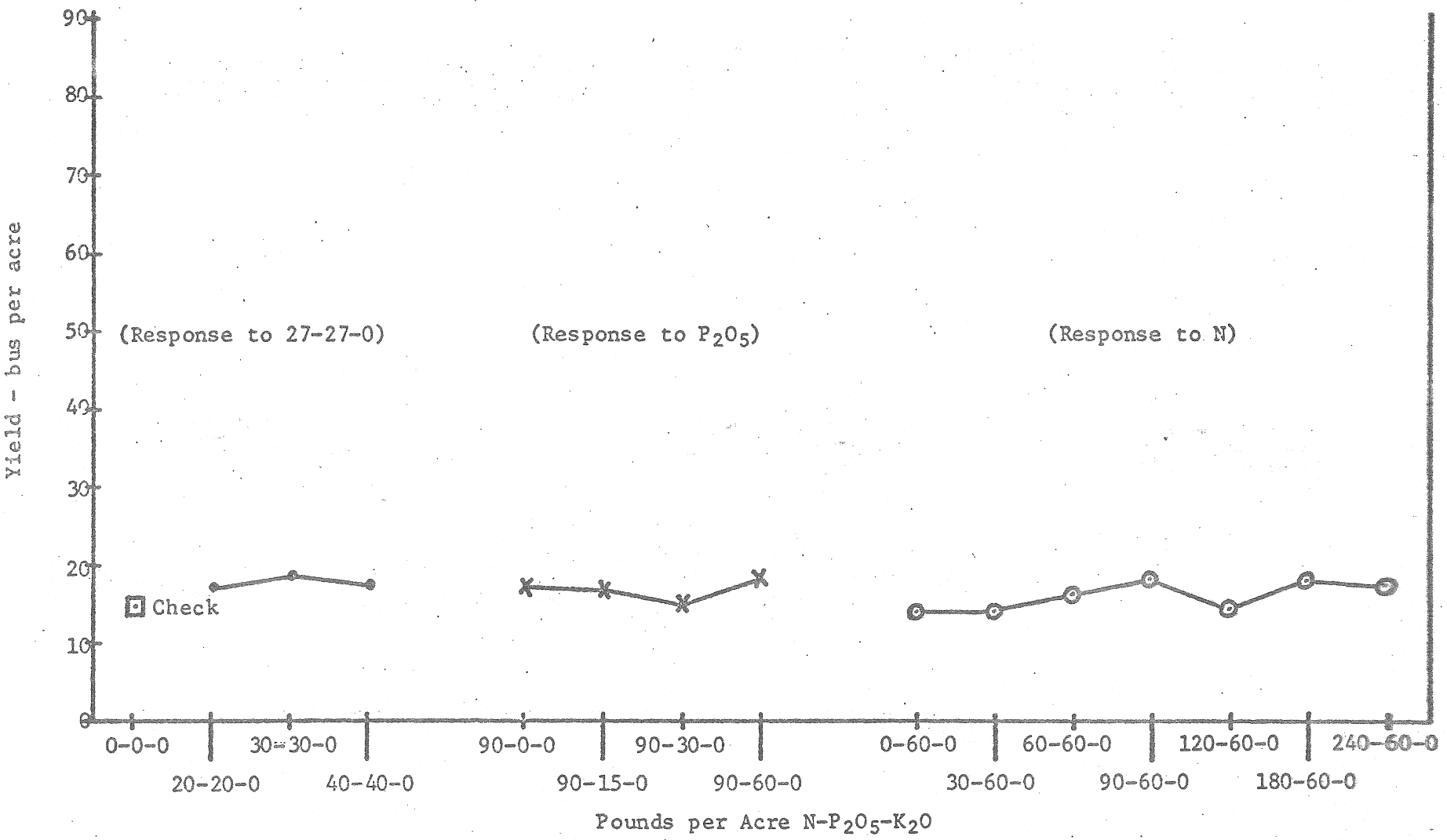
YIELD RESULTS

Pounds per Acre				Product (1)	Cost of (2) Fertilizer	Yield	Crop Value-Fert. Cost		Profit Due to Fert.	
N	P_2O_5	K_2O	S			bus/A	$2.00/bus	$3.00/bus	$2.00/bus	$3.00/bu
0	0	0	0	Check	0.00	14.7	29.40	44.10	0.00	0.00
90	0	0	103	21-0-0 at 429	8.37	17.4	26.43	43.83	- 2.97	- 0.27
90	15	0	99	21-0-0 at 414 + 11-55-0 at 27	9.62	17.0	24.38	41.38	- 5.02	- 2.72
90	30	0	96	21-0-0 at 400 + 11-55-0 at 54	10.91	15.1	19.29	34.39	-10.11	- 9.71
90	60	0	89	21-0-0 at 371 + 11-55-0 at 109	13.50	18.6	23.70	42.30	- 5.70	- 1.80
0	60	0	0	11-55-0 at 109	6.27	14.4	22.53	36.93	- 6.87	- 7.17
30	60	0	21	21-0-0 at 86 + 11-55-0 at 109	7.95	14.3	20.65	34.95	- 8.75	- 9.15
60	60	0	55	21-0-0 at 229 + 11-55-0 at 109	10.74	16.6	22.46	39.06	- 6.94	- 5.04
120	60	0	123	21-0-0 at 514 + 11-55-0 at 109	16.29	14.8	13.31	28.11	-16.09	-15.99
180	60	0	192	21-0-0 at 800 + 11-55-0 at 109	21.87	18.4	14.93	33.33	-14.47	-10.77
240	60	0	261	21-0-0 at 1086 + 11-55-0 at 109	27.45	17.8	8.15	25.95	-21.25	-18.15
20	20	0	0	27-27-0 at 74	4.00	17.0	30.00	47.00	0.60	2.90
30	30	0	0	27-27-0 at 111	5.99	18.5	31.01	49.51	0.61	5.41
40	40	0	0	27-27-0 at 148	7.99	17.8	27.61	45.41	-1.80	1.31

(1) 21-0-0 Broadcast, 11-55-0 Drilled in with the seed, 27-27-0 Banded
(2) Fertilizer Costs 11-55-0 at $115/ton, 21-0-0 at $39.00/ton, 27-27-0 at $108.00/ton

SEE YOUR SHERRITT AGENT FOR ADDITIONAL RESULTS

Noralta Flax Response to Applications of Nitrogen (N), Phosphorus (P_2O_5) and Nitrogen-Phosphorus Fertilizers at Burgis, Saskatchewan in 1970



Sherritt Gordon Mines Limited
Research and Development Division

Fort Saskatchewan, Alberta

1970 Fertilizer Plot Data

Seed: Tokyo Buckwheat Response to Nitrogen, Phosphorus and Sulphur Fertilizers

Location: Bill Goodman, Naisberry, Saskatchewan, NE 36-44-18-W2

Soil Zone: Black Soil Type Melfort Silty Clay Loam Topography Flat

Drainage Fair

Soil Analysis: Pounds per Acre N: 38 P: 28 K: 451

Cropping History: 1969 and 1968 Wheat, 1967 Summerfallow

Date of Seeding: 24 June Rate of Seeding: 48 lb per acre Date of Harvesting: 19 September

Moisture: Fair at time of seeding Total Rainfall:

Herbicide: 1 qt per acre Avadex before seeding

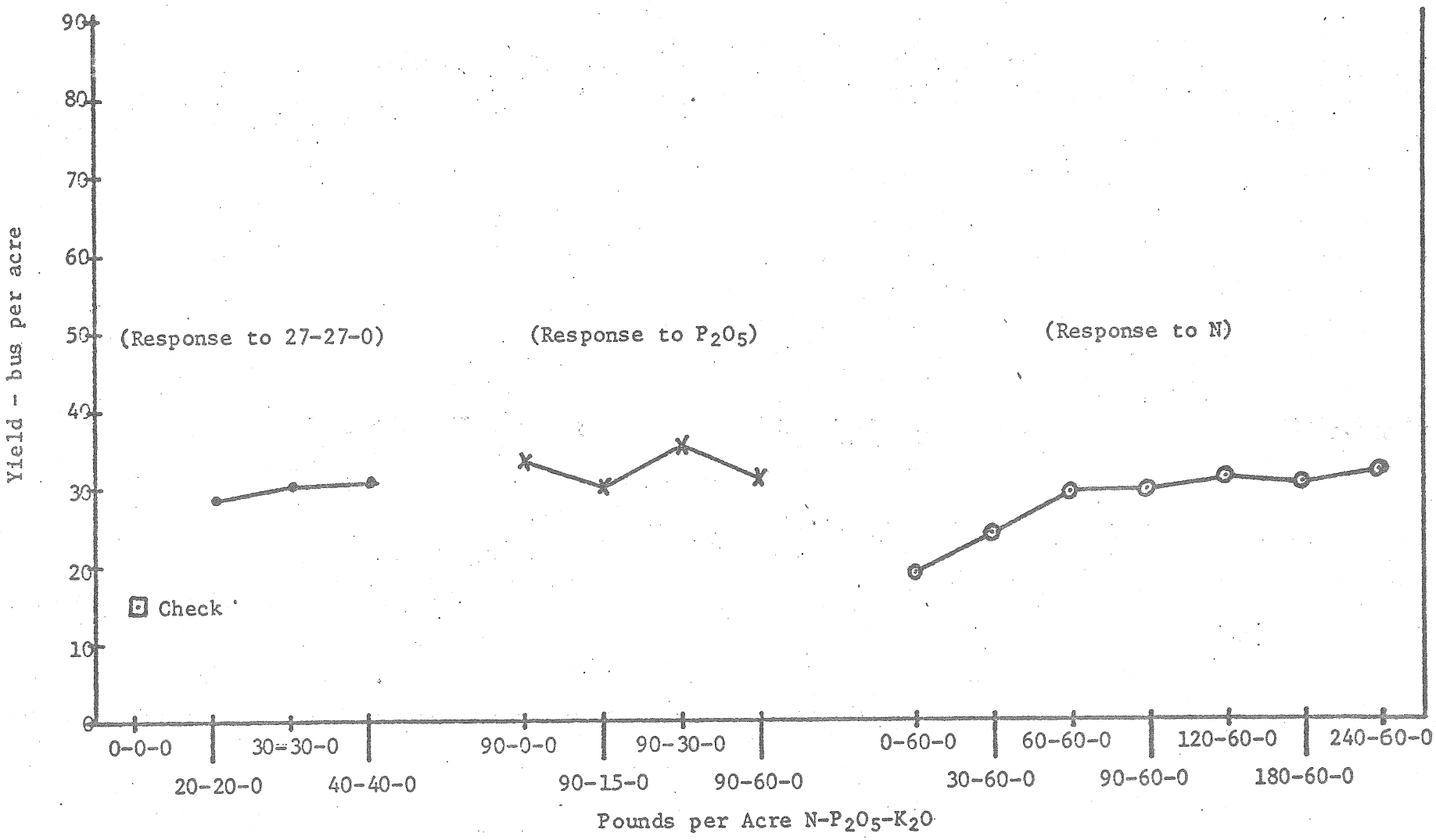
YIELD RESULTS

Pounds per Acre				Product (1)	Cost of Fertilizer (2)	Yield bus/A	Crop Value-Fert. Cost $2.00/bus	Profit Due to Fert. $2.00/bus
N	P_2O_5	K_2O	S					
0	0	0	0	Check	0.00	15.0	30.00	0.00
90	0	0	103	21-0-0 at 429	8.37	33.4	58.43	28.43
90	15	0	99	21-0-0 at 414 + 11-55-0 at 27	9.62	30.1	50.58	20.58
90	30	0	96	21-0-0 at 400 + 11-55-0 at 54	10.91	35.5	60.09	30.09
90	60	0	89	21-0-0 at 371 + 11-55-0 at 109	13.50	29.9	46.30	16.30
0	60	0	0	11-55-0 at 109	6.27	19.2	32.13	2.13
30	60	0	21	21-0-0 at 86 + 11-55-0 at 109	7.95	24.2	40.45	10.45
60	60	0	55	21-0-0 at 229 + 11-55-0 at 109	10.74	29.7	48.66	18.66
120	60	0	123	21-0-0 at 514 + 11-55-0 at 109	16.29	31.2	46.11	16.11
180	60	0	192	21-0-0 at 800 + 11-55-0 at 109	21.87	30.7	39.53	9.53
240	60	0	261	21-0-0 at 1086 + 11-55-0 at 109	27.45	32.1	36.75	6.75
20	20	0	0	27-27-0 at 74	4.00	28.4	52.80	22.80
30	30	0	0	27-27-0 at 111	5.99	30.2	54.41	24.41
40	40	0	0	27-27-0 at 148	7.99	30.7	53.41	23.41

(1) 21-0-0 Broadcast, 11-55-0 Drilled in with the seed, 27-27-0 Banded
(2) Fertilizer Costs 11-55-0 at $115/ton, 21-0-0 at $39.00/ton, 27-27-0 at $108.00/ton

SEE YOUR SHERRITT AGENT FOR ADDITIONAL RESULTS

Tokyo Buckwheat Response to Applications of Nitrogen (N), Phosphorus (P_2O_5) and Nitrogen-Phosphorus Fertilizers at Naisberry, Saskatchewan in 1970



Sherritt Gordon Mines Limited
Research and Development Division
Fort Saskatchewan, Alberta

1970 Fertilizer Plot Data

Seed: Tokyo Buckwheat Response to Nitrogen, Phosphorus and Sulphur Fertilizers

Location: Bill Heshka, Burgis, Saskatchewan NW 18-29-3-W2

Soil Zone: Black Soil Type: Canora Loam Topography: Flat

Drainage: Good

Soil Analysis: Pounds per Acre N: 32 P: 18 K: 268

Cropping History: 1969 Barley

Date of Seeding: 16 June Rate of Seeding: 48 lb per acre Date of Harvesting: 18 September

Moisture: Good at time of seeding Total Rainfall: 7.03 inches

Herbicide: 1 1/2 qt per acre Avadex before seeding

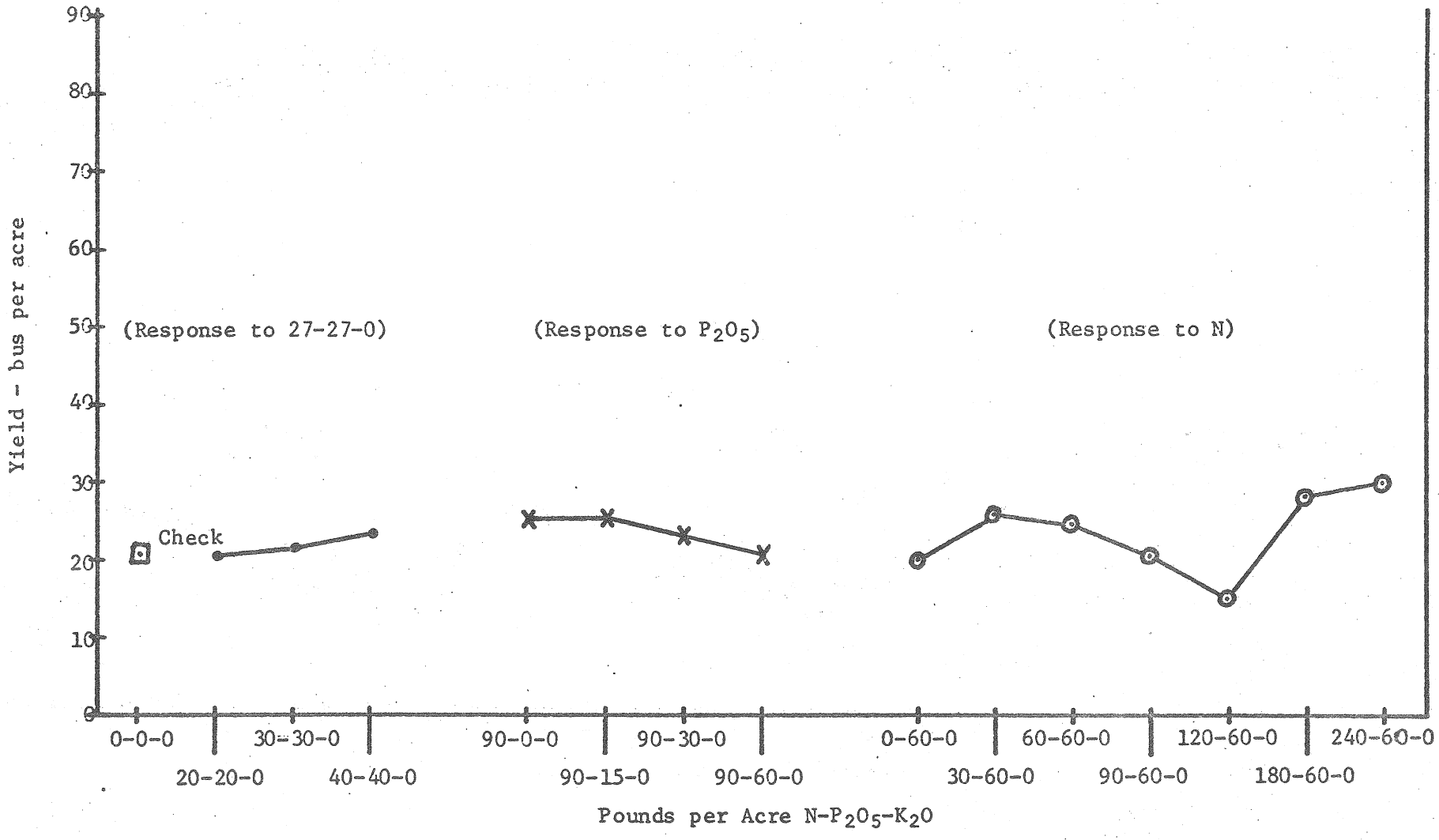
YIELD RESULTS

Pounds per Acre N	Pounds per Acre P_2O_5	Pounds per Acre K_2O	Pounds per Acre S	Product (1)	Cost of Fertilizer (2)	Yield bus/A	Crop Value-Fert. Cost $2.00/bus	Profit Due to Fert. $2.00/bus
0	0	0	0	Check	0.00	20.8	41.60	0.00
90	0	0	103	21-0-0 at 429	8.37	25.4	42.43	0.83
90	15	0	99	21-0-0 at 414 + 11-55-0 at 27	9.62	25.7	41.78	0.18
90	30	0	96	21-0-0 at 400 + 11-55-0 at 54	10.91	23.6	36.29	- 5.39
90	60	0	89	21-0-0 at 371 + 11-55-0 at 109	13.50	20.9	28.30	-13.30
0	60	0	0	11-55-0 at 109	6.27	20.1	33.93	- 7.67
30	60	0	21	21-0-0 at 86 + 11-55-0 at 109	7.95	26.2	44.45	2.85
60	60	0	55	21-0-0 at 229 + 11-55-0 at 109	10.74	24.8	38.86	- 2.74
120	60	0	123	21-0-0 at 514 + 11-55-0 at 109	16.29	15.2	14.11	-27.49
180	60	0	192	21-0-0 at 800 + 11-55-0 at 109	21.87	28.3	34.73	- 6.87
240	60	0	261	21-0-0 at 1086 + 11-55-0 at 109	27.45	35.2	42.95	1.35
20	20	0	0	27-27-0 at 74	4.00	20.8	37.60	- 4.00
30	30	0	0	27-27-0 at 111	5.99	21.8	37.61	- 3.99
40	40	0	0	27-27-0 at 148	7.99	23.6	39.21	- 2.39

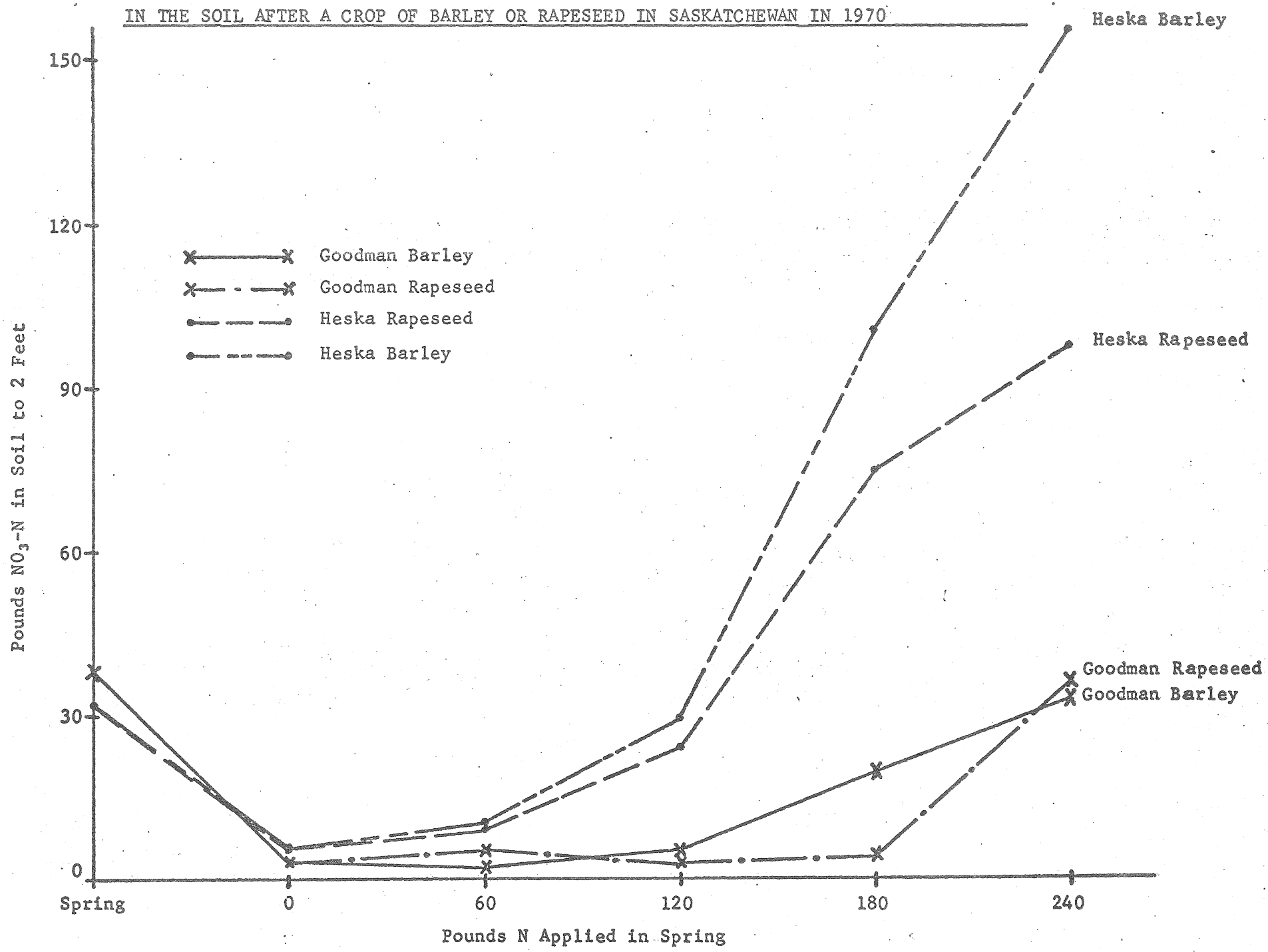
(1) 21-0-0 Broadcast, 11-55-0 Drilled in with the seed, 27-27-0 Banded
(2) Fertilizer Costs 11-55-0 at $115/ton, 21-0-0 at $39.00/ton, 27-27-0 at $108.00/ton

SEE YOUR SHERRITT AGENT FOR ADDITIONAL RESULTS

Tokyo Buckwheat Response to Applications of Nitrogen (N), Phosphorus (P_2O_5) and Nitrogen-Phosphorus Fertilizers at Burgis, Saskatchewan in 1970



THE EFFECT OF NITROGEN FERTILIZER APPLICATIONS ON THE FALL AVAILABLE NITROGEN LEVEL IN THE SOIL AFTER A CROP OF BARLEY OR RAPESEED IN SASKATCHEWAN IN 1970



The Effect of Nitrogen Fertilizer Applications on Percent Protein in Grain in Saskatchewan

Location	N to 2'		Fertilizer Treatment							
			0-0-0	0-60-0	30-60-0	60-60-0	90-60-0	120-60-0	180-60-0	240-60-0
CONQUEST BARLEY, 1969										
Kinistino	22	% Protein	13.1	14.1	14.1	14.9	15.5	15.5	16.4	16.5
		Yield bus.	25.5	39.5	43.6	47.4	52.5	54.4	56.1	65.7
		Bus. Weight	50.7	51.2	50.7	49.6	50.4	48.8	49.4	48.8
Burgis	20	% Protein	11.8	9.5	9.6	11.8	13.5	16.1	16.8	17.1
		Yield bus.	12.1	12.9	17.7	24.5	28.3	28.3	23.8	23.5
		Bus. Weight	46.2	40.6	42.2	44.1	46.2	47.9	47.5	44.9
Stornoway	17	% Protein	11.9	12.7	13.4	13.7	15.0	16.3	16.2	16.6
		Yield bus.	38.0	50.7	57.4	60.6	66.9	59.4	61.9	60.2
		Bus. Weight	47.5	48.6	49.3	48.6	50.7	49.6	48.3	49.3
CONQUEST BARLEY, 1968										
Rosetown	41	% Protein	11.9			15.0		16.3		16.1
		Yield bus.	27.6			33.7		34.3		35.3
Gorlitz	52	% Protein	16.9			19.2		19.8		20.6
		Yield bus.	22.5			19.7		23.2		25.0

% Protein calculated on percent N x 6.25 oven dry weight basis
Nitrogen source 34-0-0-11S broadcast after seeding and worked in
Phosphorus source 11-55-0 drilled in with the seed